

WE CLAIM:

1. A device for vaporization injection of samples into a gas chromatography analysis instrument, comprising an elongated and heated vaporization chamber, as well as a syringe equipped with a  
5 needle, the device being of the type in which the sample introduction is carried out without prior vaporization of said sample within the needle, and being further foreseen, at least a stop and vaporization means for the liquid within the vaporization chamber characterized in that the distance between the free end of the needle and the stop  
10 and vaporization means for the liquid is greater than 55 mm.
2. A device according to claim 1, characterized in that said distance is greater than 80 mm.
3. A device according to claim 1, characterized in that said needle extends into the vaporization chamber for a length less than  
15 30 mm.
4. A device according to one of the preceding claims, characterized in that the internal channel of said needle has a diameter of less than 0.13 mm.
5. A device according to claim 1, 3 or 4, in which the upper portion  
20 of said vaporization chamber is cooled or unheated.
6. A device according to one of the claims 1 to 5, in which the external wall of said needle is covered by a thermal insulating material.
7. A device according to one of the claims 1 to 5, in which said  
25 needle is completely formed in a thermal insulating polymer.
8. A device according to one of the claims 1 to 7, in which the complete length of said vaporization chamber is greater than 10 cm.
9. A device according to claim 8, in which the complete length of  
said vaporization chamber is greater than 15 cm.

10. A device according to one of the previous claims, in which said vaporization chamber is coiled.
11. A device according to one of the previous claims, in which said vaporization chamber is formed in metal.
- 5 12. A device according to claim 11, in which the stated vaporization chamber is formed in "silcosteel".
13. A device according to one of the preceding claims, in which a conventional septum or a Merlin valve are able to be alternately mounted on the injector head.
- 10 14. A device according to one or more of the preceding claims, characterized in that said vaporization chamber has a restriction in its lower part containing said stop and vaporization means.
15. A device according to claim 14, characterized in that said restriction is connected to the upper part of the chamber by a funnelled wall.
16. A device according to claim 13 or 15, characterized in that heating means for the vaporization chamber are provided operating at the vaporization temperature of the sample in correspondence to said restriction, and at a lower temperature in the upper part of the
- 20 chamber.
17. A vaporization method for a sample injected via a syringe with a needle into a vaporization chamber of a gas chromatography analysis instrument, characterized in that said sample is injected in correspondence or in proximity of an upper portion of said vaporization chamber, and is released in form of a band crossing said vaporization chamber at high speed, and that said liquid band is stopped by stop means and said sample is vaporized in a heated chamber lower portion.

18. A method according to claim 17, in which said needle is inserted into said chamber for a length not greater than 30 mm and in such a way that the distance between the point of said needle and said liquid stop means is greater than 55 mm.